

Unit 1 Plan

Designed by: J. Moor, R. Rawhowser, A. Sanchez, M. Saucedo
Grade: 9
Subject: Algebra 1

Designed in School Year: 2010-2011
Unit: Expressions, Equations, and Functions
Estimated Timeframe: 3 weeks

Unit topic and subtopics	Essential Learning	Standards	Assessments	Strategies
<p>Writing and Understanding Expressions, Equations, and Functions</p> <p>Expressions and Equations</p> <p>Introduction to Functions</p>	<p>Understandings (Students will understand that):</p> <ul style="list-style-type: none"> • A variable is a letter that is used to represent one or more numbers. • An expression involving variables is called an algebraic expression. • When you substitute a number for each variable in an algebraic expression and simplify, you are evaluating the algebraic expression. • Simplifying numerical expressions, using formulas, and writing algebraic expressions are essential activities for gaining an understanding of writing equations and functions which model real-world situations. <p>Skills (Students will be able to):</p> <ul style="list-style-type: none"> • identify the difference between expressions and equations • simplify a numerical expression by using the rules for order of operations • evaluate an algebraic expression by using the rules for order of operations • express a word phrase as an algebraic expression (The difference of eight and a number is $8-x$) • express a sentence as an equation or inequality • dissect a word problem into its essential elements <ul style="list-style-type: none"> • identify a function • graph a function by using an input-output table 	<p>Illinois State Standards:</p> <p>6.A.4 8.B.4a 8.C.4b</p> <p>College Readiness Standards:</p> <p>Expressions, Equations, & Inequalities (16-23)</p> <p>Basic Operations & Applications (13-23)</p> <p>Common Core Standards:</p> <p>A-SSE.1 A-SSE.2</p>	<p>Anchor Performance Assessment:</p> <p>Task Overview: Exhibit mastery of skills presented in this unit by providing written solutions to a variety of algebraic problems.</p> <p>Products: Comprehensive written exam assessing the skills practiced in this unit.</p> <p>Criteria: An exam score below 69.5% is failing. An exam score of 69.6%–76.4% is below average, 76.5%–84.4% is average, 84.5%–92.4% is above average, and 92.5% or above is excellent.</p> <p>Other Key Assessments/Evidence: Frequent quizzes assessing the skills practiced in this unit.</p>	<p>Homework assignments, class discussion, small group activities</p> <p>Tests and quizzes</p> <p>Oral participation: Students both ask and answer questions posed by the teacher and other students</p> <p>Notebook entries which include the results of:</p> <ul style="list-style-type: none"> • demonstrations: students working individually, in pairs, or in groups demonstrate ideas using manipulatives, graph paper, calculators, or whiteboard • non-routine problems: the student restates the problem in his own words, explores the problem by drawing a picture or a chart, chooses a strategy such as guess and test, looks for a pattern, logical deduction, working backward, or exhaustive listing, and carries out the chosen strategy to solve the problem • error analysis and commentary, in which students keep a list of specific homework, tests, and quiz problems that resulted in errors; the format includes a statement of the problem as posed, a statement of the exact error made, and a correction and comment

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Properties of Real Numbers	<ul style="list-style-type: none"> • classify a number as natural, whole, integer, rational, irrational, or real • perform basic operations on real numbers (addition, subtraction, multiplication, division) • rewrite an expression by using the distributive property • simplify an expression by combining like terms • find the square root of a number 			
Major Resources Used in Every Unit: Textbook Pencil Notebook Scientific calculator Whiteboard Computer Computer projection device or SMARTBoard				